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Complexes of crown ether-containing N-phosphorylated thioamides and thioureas with CoII, ZnII and PdII cations

Safin D., Babashkina M., Sokolov F., Baranov S., Ekkehardt Hahn F., Pape T.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

The reaction of the potassium salts of N-phosphorylated thioureas [4'-benzo-15-crwn-5]NHC(S)NHP(Y)(OiPr)2 (Y = S, HLI; Y = O, HLII) with ZnII and CoII cations in aqueous EtOH leads to complexes of formulae Zn(LI,IIS,Y)2 (Y = S, 1; Y = O, 2) and Co(LIS,S')2 (3), while interaction of the potassium salt of N-phosphorylated thioamide [4'-benzo-l5-crwn-5]C(S)NHP(O) (OiPr)2 (HLIII) with ZnII in the same conditions leads to the complex Zn(HLIII)(LIII-S,O) 2 (4). The reaction of the potassium salt of crown ether-containing N-phosphorylated bis-thiourea N,N'-[C(S)NHP(O)(OiPT)2] 2-1,10-diaza-18crown-6 (H2L) with CoII, Zn.II and PdII cations in anhydrous CH3OH leads to complexes M2(L-O,A)2 (M = Co, 5; Zn, 6; M = Pd, 7). Thioamide HLIII was investigated by single-crystal X-ray diffraction.

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Keywords

Chelates, Cobalt, Crown compounds, Palladium, Zinc